

REMARKS

The Examiner in the Office Action above cited has withdrawn the prior rejection and Applicant expresses its appreciation for this conclusion. However, the Examiner has imposed a new rejection based on Greenberg et al, U.S. Patent No. 5,345,333 in view of Dekal et al., U.S. Patent No. 5,810,008. The Examiner's detailed reasoning in support of such rejection is set forth in the Action. It is respectfully urged that the Examiner's analysis is in error, and the new rejection is therefore respectfully traversed for the reasons now to be set forth.

It should be noted initially that Applicant has introduced amending language into the independent claims 1 and 12 which when taken in the context of the remainder of the claims emphasize the critical distinctions between the present invention and the references now relied upon. The change will be seen *e.g.* in the last paragraph of amended claim 1 where language has been added "applying a computerized confocal emulation algorithm" to qualify the otherwise explicitly stated cross-correlation step and how it is effected.

Applicant appreciates that the present Office Action is "final". It is considered that entry of the present Amendment and consideration of the Remarks herein will render all remaining claims allowable, and hence it is believed that this Amendment is proper pursuant to Rule 116 of the Rules of Practice, whereby its admission is urged. Should the Examiner not agree that the claims are allowable, then it is requested that the Amendment be entered for purposes of appeal. Additionally it is believed appropriate that this Amendment be entered and considered because of the new rejection, in consequence of which this is the first opportunity that Applicant has had to amend and comment on the newly cited references.

Greenberg's patent 5,345,333 shows that it is the disparity (the difference) between the left and right-angled images that creates the cues the brain uses to perceive a 3D image of the object being viewed. That is, the human brain does all the work in combining the two

slightly different views of the specimen into a single 3D image. The Examiner is incorrect in assuming that Greenberg has suggested that there is a “confocal” image produced by looking at two or more angled images of the same object. In applicant’s invention, the term “confocal” image is used to describe an image that has an extremely shallow depth of focus, so that in effect it can be considered a very thin optical section of the specimen. Greenberg’s patent 5,345,333 does not create thin sections of a specimen. In fact, it does the opposite, it produces a deeper depth of field rather than an extremely shallow depth of field, which is what applicant teach in their new invention. The 3D perception in a stereo-pair image like that produced by Greenberg’s patent is created by the brain of the observer. The observer’s eye-brain complex perceives the differences in the left and right images, and merges them into a single 3D image. There is no suggestion in Greenberg’s invention that the left and right images produce a thin confocal emulated image. This is not a possibility in Greenberg’s patent 5,345,333.

The very thin optical sections that applicants can produce using the new technology must be created through computer analysis and image process, and it cannot be seen or appreciated using the human eye-brain complex without the computer interface, analysis and processing. Thus, there is nothing obvious about our new technology that could be gleaned from Greenberg’s earlier patent that would lead one that is skilled in the art to come up with thin optical sections, as taught in the present disclosure. There is indeed nothing in Greenberg’s patent 5,345,333 that would even suggest the idea of creating a “confocal” type image.

Regarding the secondary reference to Dekal, et al., this relates to an ultrasound viewing system, and as one aspect of the system a plurality of thin viewed sections are stacked to form a three-dimensional image. Applicants of course make no claim to having

broadly invented such an old idea; which is well known to those skilled in the art of microscopy. Applicant's have however invented a new way of creating the thin "confocal-like" optical sections of thick specimens by using optically tilted oblique illumination and then processing the section or sections in a very specific way to form the 3D image. As stated in the previous paragraphs, there is no suggestion in Greenberg's patent 5,345,333 that thin optical sections are created. In fact, the goal of the Greenberg earlier invention was to produce images with very large depths of field, that is, to create the thickest depth of field, not the thinnest depth of field, which is the goal of a confocal-like microscope.

In consideration of the amendments introduced by this paper and in view of the foregoing remarks it is respectfully submitted that all claims are now in condition for immediate allowance, and favorable consideration a Notice to that effect is therefore respectfully solicited.

Respectfully submitted,



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